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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,642	10/10/2001	Mark S. Crowder	3123-380	8359

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EXAMINER

KIM, PAUL D

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/975,642

Applicant(s)

CROWDER ET AL.

Examiner

Paul D Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 32-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11-13, 18, 20, 25, 26, 29-31, 43, 44, 47, 48, 51, 53-57, 59 and 61-63 is/are rejected.
- 7) ☒ Claim(s) 9, 14-17, 19, 21-24, 27, 28, 45, 46, 49, 50, 52, 58 and 60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This office action is a restriction requirement filed on 3/10/2004.

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-31 and 43-63 filed on 3/10/2004 is acknowledged. The traversal is on the ground that all the claims as filed would not require additional searching, not place any undue burden on the patent office. This is not found persuasive because these inventions (Group I and II) are distinct for the reasons given last office action on Paper No. 12 and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper. However, examiner agrees with the applicant that the amended claims 51-63 as method claims are going to belong to Group I.

The requirement is still deemed proper and is therefore **made FINAL**.

2. Claims 32-42 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement filed on 3/10/2004.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: --A METHOD FOR REDUCING CORROSION OF A HEAD ELEMENT DURING THE MANUFACTURING OF A DISK DRIVE--.

Claim Objections

4. Claims 10, 12, 13, 15, 17, 18, 20, 22-28, 46, 48, 50, 53, 59 and 60 are objected to because of the following informalities:

As per claim 10 the phrase "its" recited in line 2 is not clear. It needs to be changed such as --said head element--.

Claim 12 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The phrase "said step of reworking said disk drive" recited in lines 2-3 is an improper dependent form.

As per claims 13, 15, 17, 20, 23, 46, 48, 50, 53 the phrase "a portion" recited in line 2 should be changed to --said portion--.

As per claim 59 the phrase "its" recited in line 3 is not clear. It needs to be changed such as --said head element--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 12, 13, 18, 20, 25, 26, 29 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 12 the phrase "said step of reworking said disk drive" as recited in lines 2-3 lacks antecedent basis.

As per claims 29 and 30 the phrase "said protective coating thickness" as recited in lines 1-2 lacks antecedent basis.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-6, 8, 11, 29-31, 51, 54-57 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh (US PAT. 4,716,483) in view of Chen et al. (US PAT. 6,532,134).

Walsh teaches a process of rework of the disk drive comprising a step of removing head elements (such as arm stack, transducer heads and wires) from the disk drive for reworking (as per **claims 11 and 51**) such as head cleaning, repair, replacement, testing, alignment as disclosed in col. 2, line 65 to col. 3, line 4.

Even though Walsh does not teach a process of opening and removing the head element from the housing of the disk drive, it would be obvious to modify the process of

reworking of Walsh including a process of opening and removing the head element from the housing of the disk drive in order to remove and reworking the head element.

However, Walsh does not teach a process of applying a protective coating to the head element. Chen et al. teach a process of applying a protective coating to a slider (equivalent with the transducer head) to protect the slider from the damage (see also col. 5, lines 27-47). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of reworking a head element of Walsh by applying a protective coating to the head element as taught by Chen et al. in order to protect the head element from the damage.

As per **claim 2** Chen et al. also teach a process of cleaning the head element prior to apply the protective coating in order to increase storage medium/transducer interface reliability (col. 5, lines 41-54).

As per **claims 3-6 and 54-56** Chen et al. also teach a coating process to apply the protective coating by high rate magnetron sputtering technique or other techniques in order to have a dense and low stress film on the slider (col. 5, lines 34-40). Even though Chen et al. do not disclose the other techniques recited in claims 3-6, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to apply the protective coating by the techniques as recited in the claimed invention because Applicant has not disclosed that the techniques as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Chen et al. because

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the protective coating by the techniques as recited in the claimed invention would perform equally well. Therefore, it would have been an obvious matter of design choice to modify the protective coating by the sputtering technique of Chen et al. to obtain the invention as specified in claims 3-6.

As per **claims 8, 30, 31, 57, 62 and 63** Chen et al. also disclose that a thickness of the protective coating is about 125 to 800 angstroms.

As per **claims 29 and 61** Chen et al. also disclose that the protective coating is a monolayer.

9. Claims 7 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh in view of Chen et al., and further in view of Bohrn et al. (US PAT. 4,775,586).

Walsh, modified by Chen et al., teaches all of the limitations as set forth above except fluorocarbon polymer as the protective coating. Bohrn et al. disclose a composition including a fluorocarbon polymer due to qualities of fire and heat resistance (col. 6, lines 47-60). Therefore, it would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a protective coating of Walsh, modified by Chen et al., by a fluorocarbon polymer as taught by Bohrn et al. in order to have qualities of fire and heat resistance.

10. Claims 10 and 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh in view of Chen et al., and further in view of Hsiao et al. (US PAT. 6,416,935).

Walsh, modified by Chen et al., teaches all of the limitations as set forth above except the protection coating for the corrosion protection. Hsiao et al. teach a process of making a transducer (slider) including a process of forming a protection coating having

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carbon material on the slider to protect the slider from the corrosion (see also col. 2, lines 14-35). Therefore, it would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a facilitating process of protective coating of Walsh, modified by Chen et al., by a corrosion protection as taught by Hsiao et al. in order to protect the slider from the corrosion from a mechanical damage.

11. Claims 43, 44, 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walsh in view of Chen et al., and further in view of Arya et al. (US PAT. 5,969,906).

Walsh, modified by Chen et al., teaches all of the limitations as set forth above except placing the head element into a container and transporting the container (as per **claim 43 and 47**). Arya et al. teach a process of automatic assembly system for a head element including processes of placing the head element (30) into a container (324) as shown in Fig. 6 and transporting the container as shown in Fig. 5 in order to provide very efficient automated process moving constantly the container from station to station.

As per **claims 44 and 48** Chen et al. also teach a process of cleaning the head element prior to apply the protective coating in order to increase storage medium/transducer interface reliability (col. 5, lines 41-54).

Allowable Subject Matter

12. Claims 9, 14-17, 19, 21-24, 27, 28, 45, 46, 49, 50, 52, 58 and 60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 12, 13, 18, 20, 25 and 26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356. The examiner can normally be reached on Tuesday-Friday between 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim
Examiner
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